



Cost-Benefit Subgroup Briefing to the OCG

Anne (Yablonski) Rurup

ASD-410

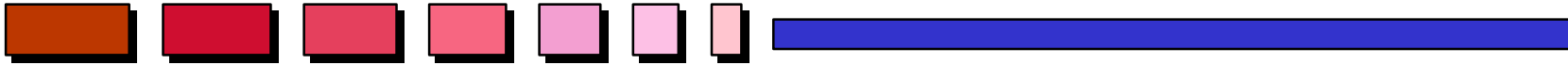
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Outline



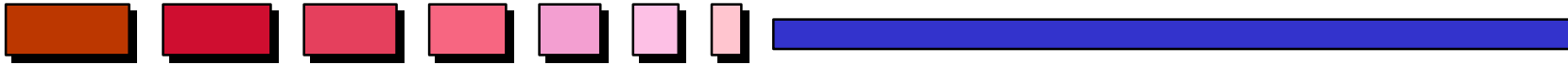
- Metrics Request Update
- Team Assumptions
- Data Sources for Benefits Estimating
- Additional Data Requirements
- High Priority Metrics
- Challenges
- Next Steps

Metrics Request Update



- We submitted update to the TEMP to Ray Yuan in early June
- We are submitting an update to the TEMP now
 - Based on Benefit Metrics prioritization exercise
 - Based on coordination with the HF subgroup
- There is significant metric overlap between applications.
 - Separate data for each application is still required.

Team OpEval Assumptions



- OpEval of applications will be executed simultaneously, not individually.
- There will be limited on/off operations at the OpEval
- We need both types of baseline data. Two baselines are relevant for collecting baseline metrics for:
 - Today's system – pre-OpEval; and
 - OpEval procedures when conditions are not normal. (On and Off operations)

Data Sources for Benefits Estimating



- Five sources for data from the Op Eval:
 - 1. ADS-B data (location and time will be accurate)
 - 2. Radar data
 - 3. Data collectors (observers on board)
 - 4. Surveys / questionnaires
 - 5. Post flight interviews
- For baseline data (pre-Op/Eval):
 - 1. SDF studies
 - 2. Reports and ongoing studies
 - 3. CODAS data
 - 4. NTSB data
- Demographic Data Requirements
 - 1. Environmental conditions (WX, VIS, CEIL, etc.)
 - 2. Crew demographics
 - 3. Aircraft data

Metrics Request Format



METRICS	Priority Bens. HF	Base Measure Source	Perform. Measure Source	Approach
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- Metric - High level descriptor of data element
- Priority - level of importance of obtaining metric delineated by Benefits group priority and Human Factors group priority
 - High = required
 - Medium = would like to obtain
 - Low = not necessary but would add some insight
- Base Measurement Source - data source for approximating baseline
- Performance Measure Source - data source for use in forecasting performance with equipment on.
- Approach - approach for obtaining measure
 - where available - the responsible individual is identified

Approach Spacing Requirements

High Priority Metrics



- Flying time during final approach maneuvers **compared to equipment off**
- Flying time from final approach fix to touchdown **compared to equipment off**
- Number and duration of ATC communications within terminal area for a specific flight during final approach **compared to equipment off**
- Number of mis-identifications by pilot in call-backs **compared to equipment off**
- Number of repeated traffic call-outs by ATC due to pilot inability to visually acquire traffic **compared to equipment off**
- Separation distance between specific pairs of aircraft during approaches within terminal area airspace **compared to equipment off**
- The number of stolen transmissions

Departure Spacing/Clearance Requirements

High Priority Metrics



- Time between takeoff clearances
- Time taken by pilot to verify lead flight after ATC call-out in marginal VFR or IFR conditions
- Number and duration of ATC communications within terminal area for a specific flight during takeoff **compared to equipment turned off**
- Taxi-out Time
- Time in departure queue
- Separation distance between specific pairs of aircraft during departures within terminal area airspace **compared to equipment off**

Runway/Final Approach Occupancy Awareness

High Priority Metrics



- Number and duration of ATC communications within terminal area for a specific flight during final approach, landing and taxi **compared to equipment off**
- SAFETY BENEFITS – note: these could be obtained indirectly by asking for feedback on confidence level that ADS-B will help these improve
 - Degree of pilot awareness of own position during final approach relative to:
 - * Runway/taxiway/gate configurations
 - * local air traffic at altitudes less than 1000 feet
 - * obstacles
 - Given a pending runway incursion, what is the likelihood that this equipment would help prevent an incident/accident?

Surface Situational Awareness

High Priority Metrics



- Number and duration of ATC communications within terminal area for a specific equipped flight during final approach, landing and taxi **compared to equipment off**
- Taxi out time - Taxi time from push back to departure runway for equipped flights **compared to equipment off**
- Taxi in time - Taxi time from touchdown to gate for equipped flights compared to **compared to equipment off**
- SAFETY BENEFITS– note: these could be obtained through survey
 - Degree of pilot awareness of own position during final approach relative to:
 - * Runway/taxiway/gate configurations
 - * Obstacles
 - Pilot question – Were you to be in an incident situation, how likely is it that this equip would prevent an incident/accident from occurring
 - Controller question – Were you to be in an incident situation, how likely is it that this equip would prevent an incident/accident from occurring

Challenges



- Identifying and measuring both types of baselines.
- Limited number of data points from the OpEval
 - Approximately 20-24 aircraft will be available for the test flights. These will be mixed equipage (3 different CDTI's) and mixed size (single engine, medium, and large).
- Approach spacing: May not be able to fly test courses without ADS-B/CDTI.
- Surface applications: The team supports the gathering of taxi baseline data which can establish measurements for surface applications test/ op deltas.

Next Steps



- Jim Walton is developing a baseline for Louisville
- Identify metrics contacts from each application subgroup
- Identify which metrics will be generated from the OpEval
- Identify which baseline metrics will be generated from the OpEval
- Identify other data sources
- Get involved with the questionnaires and surveys development.
- Identify Source for radar data for baseline measurement and for OpEval
 - We have submitted a radar data request